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**EUROPEAN PATENT APPLICATION**

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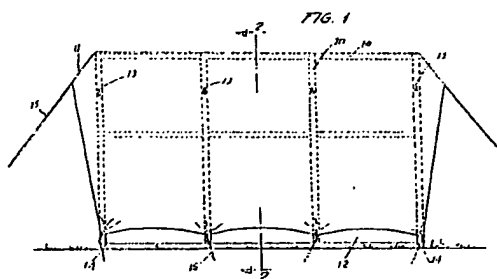
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54 Improved inflatable structure for tents.

57 The tent is erected by positioning the inflatable structure formed by the tubes (10) on the ground and blowing air under pressure through the valves (14) located at the bottom of the said inflatable structure. The inflatable tubes (10) are provided at a certain height, according to the type of tent, with respective eyelets (13) which may be on top or underneath, allowing the mounting of the waterproof fabric (11) and the tent fabric (12) and the cords (15) for tensioning the fabric (11) after the said structure (10) has been inflated.



**EP 0 359 691 A1**

## Description

## IMPROVED INFLATABLE STRUCTURE FOR TENTS

This invention relates to an improved inflatable structure for tents which, in view of the new construction, shape and design features thereof, fulfils the purpose for which it has been specifically devised with maximum reliability and efficiency.

A set of military, camping and the like tents, which may be fully erected by way of a set of elements which are coupled together and are driven into the ground, and the purpose of which is to support the fabric, canvas or the like above said elements and the subsequent fitting of a waterproof fabric spaced apart from the previous fabric a short distance, ensuring that in the case of rain possible water leaks may not affect the impermeability of the tent inner fabric is well known and, therefore, may be deemed to be state of the art.

The waterproof fabric is required to be mounted on the elements supporting the tent inner fabric and is attached to the ground by cords or tension devices, whereby the elements, the tent fabric and the waterproof fabric are supported by said elements, forming a duly balanced whole to ensure that the tent structure formed by the said elements remains perfectly vertical.

This way of supporting and erecting tents of all kinds suffers from serious drawbacks, since it is not always possible to erect the tent in daylight and under the best weather conditions. A tent frequently has to be assembled and erected practically in the dark and in certain cases under troublesome rain, whereby the operation is laborious in view of the circumstances in which it has to be effected and, in the majority of cases, it is later necessary to dismantle the tent and all the support members, and reerect it for the whole structure to be perfectly aligned and the above vertical state to be ensured.

All the above drawbacks are avoided and overcome by the object of the invention which practically dispenses with all the support members on replacing them with a fully configured inflatable structure which in all cases is adapted to the final configuration of the tent, whatever the type or model thereof. The said inflatable structure is formed by a set of interconnected tubes provided with the corresponding valves allowing a complete or partial selective inflation of the whole structure by any conventional inflating means, be it manual or automatic. All the remaining parts of the tent, such as the inner fabric and the waterproof fabric are adhered to said inflatable structure, since the latter has previously been placed on the ground.

Further details and features of the present invention will be disclosed in the following description, in which reference is made to the accompanying drawings in which, schematically, the preferred details are shown. These details are given as an example, relating to one possible embodiment, but this is not limited to the details shown therein; therefore this description may be considered from an illustrative point of view, without limitations of any nature.

Figure 1 is a side elevation view of a conventional tent in which an inflatable structure of the present invention has been illustrated in dash lines, being formed by vertical and horizontal tubes (10) connected together pneumatically and provided with valves (14).

Figure 2 is a cross section view on the line 2-2 of Figure 1, showing how the inflatable structure formed by the tubes (10) supports the tent inner fabric (12) and the outer or waterproof fabric (11).

Figure 3 is a longitudinal section view of part of an inflatable tube (10) showing how the waterproof fabric (11) is attached to the inflatable tubes (10) with conventional eyelets (13), with the tent fabric (12) being held in place at the bottom by any conventional means.

In one of the preferred embodiments of the invention, as may be seen in Figure 1, the erection of a conventional tent like the one shown in the figure is carried out by placing the inflatable structure formed by the tubes (10) in a fully uninflated state on the ground, for subsequent inflation through the valves (14) located at the bottom of the said inflatable structure. The inflatable tubes (10) are provided at a certain height, depending on the type of tent, with eyelets (13) which may be located in an upper position or in a lower position as may be seen in Figure 2 and in Figure 3, allowing for the fitting of the waterproof fabric (11) and the tent fabric (12), once the said structure (10) has been inflated, whereafter the waterproof fabric (11) is tensioned to the ground where the tent (12) has been erected with conventional tension devices (15).

As may be seen in Figures 1 and 2, the inflatable structure may adopt any shape required to support the different types of tent, known or unknown, which logically vary in both volume and design, it being always said inflatable structure and the inner pressure maintained therein which allows a rigid structure to be always available, which structure will support the different types of both inner and covering fabrics depending on the weight thereof.

The inflatable structure (10) of the invention is formed by vertical and horizontal tubes, as said above, but they may also be sloping which, further to easy erection on being connected together forming a skeleton of a certain design depending on the design of the tent, allows for very light carriage, since the materials of the said inflatable structure will preferably be made from rubber, indian rubber or like materials whereby, further to the aforementioned advantages of simplification of erection and alignment of the tent, there is that of the light weight of the structure in comparison with the weight of the conventional structures which, in turn, require to be well packed to avoid the relative movement thereof and tearing of the sheathes containing them. All of this in turn will allow for a smaller final volume and weight of all the parts of the tent, once dismantled and packed ready for carriage, or for storage until

next use, or for carriage in vehicles or trailers.

After observing the drawings and the explanation given thereof, it will be understood that the object of the invention provides for a simple, effective and speedy erection of any type of tent which may be reduced to practice with great ease, doubtlessly forming a new industrial result.

It is noted, for the pertinent effects, that as many variations and modifications of detail that the circumstances and practice may advise, may be introduced in the object of the invention, provided that the variations introduced do not alter or modify the essence as defined in the following claims.

#### Claims

1. An improved inflatable structure for tents comprising a plurality of horizontal and vertical tubes (10) connected together at different heights.

2. The improved inflatable structure for tents of claim 1, wherein said structure formed by the tubes (10) comprises as many valves (14) for inflation thereof.

3. The improved inflatable structure for tents of one of the foregoing claims, wherein the outer surface of said inflatable tubes (10) either above or below is provided with metal eyelets (13) for positioning of the waterproof fabric (11) and of the tent fabrics (12).

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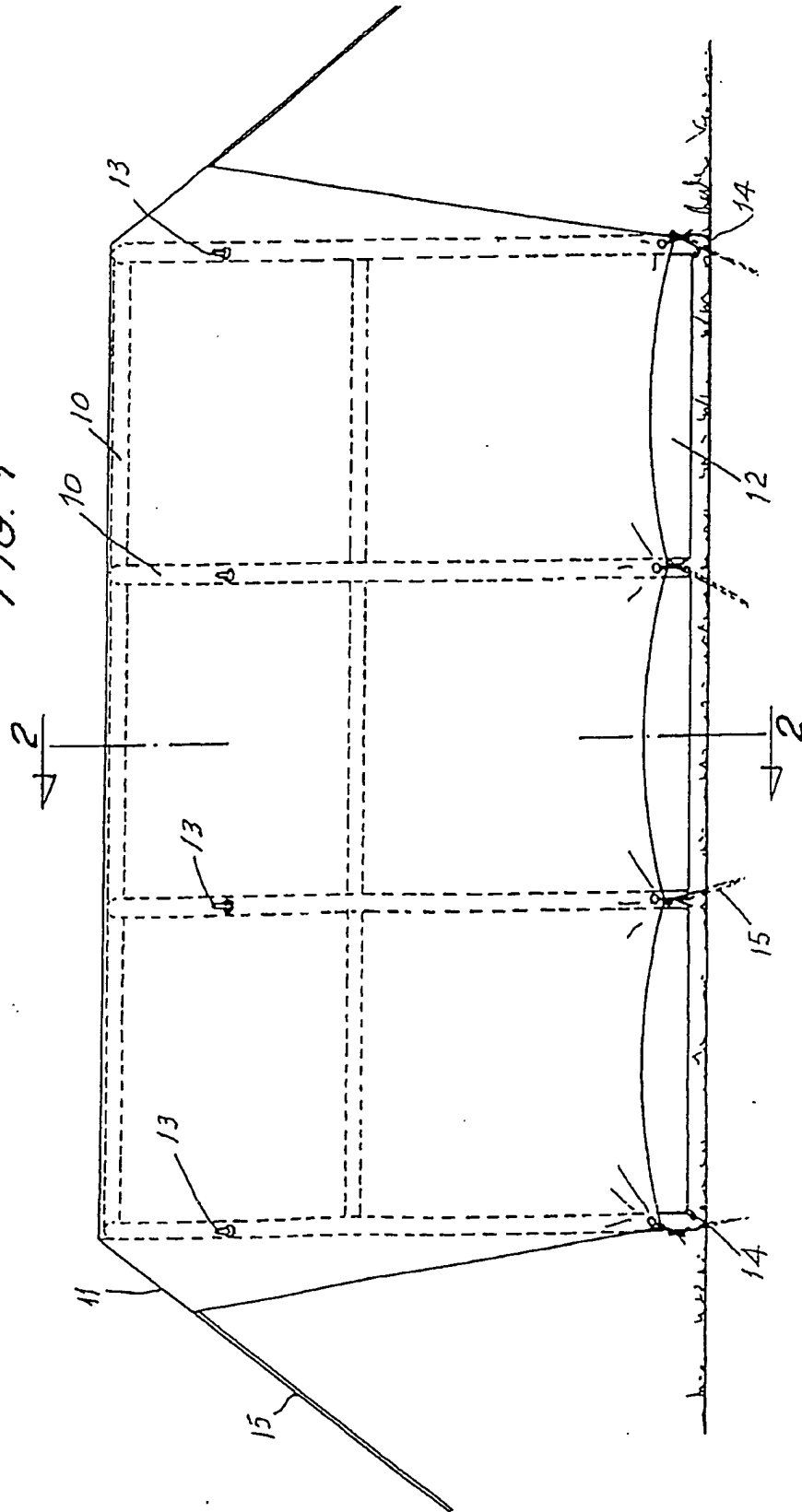
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FIG. 1



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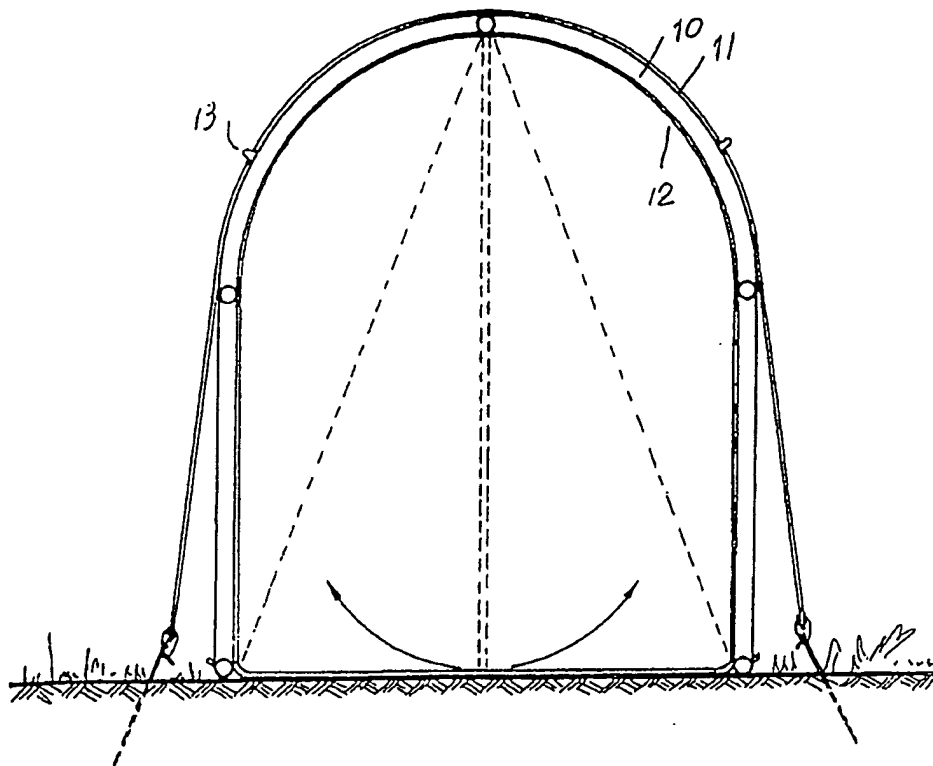


FIG. 2

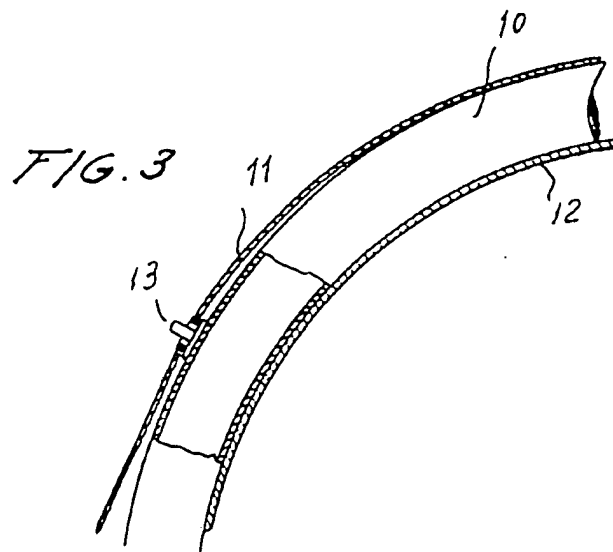


FIG. 3



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-3 145 719 (JOHNSON) * Column 1, lines 7-17; column 1, line 44 - column 2, line 18; column 2, line 38 - column 3, line 12; figures 1-2 *	1-2	E 04 H 15/20
Y	---	3	
X	GB-A- 821 439 (LEA BRIDGE INDUSTRIES) * Page 1, lines 15-33; page 1, line 68 - page 2, line 12; figures *	1-2	
Y	---	3	
Y	FR-A-2 341 017 (POTOCKI) * Page 1, line 30 - page 2, line 8; page 7, lines 1-16; figures *	3	
A	---	1	
A	US-A-3 304 665 (LEE) * Column 1, line 43 - column 2, line 13; figures * -----	1,2	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E 04 H
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	07-12-1989	LAUE F.M.	
CATEGORY OF CITED DOCUMENTS			
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